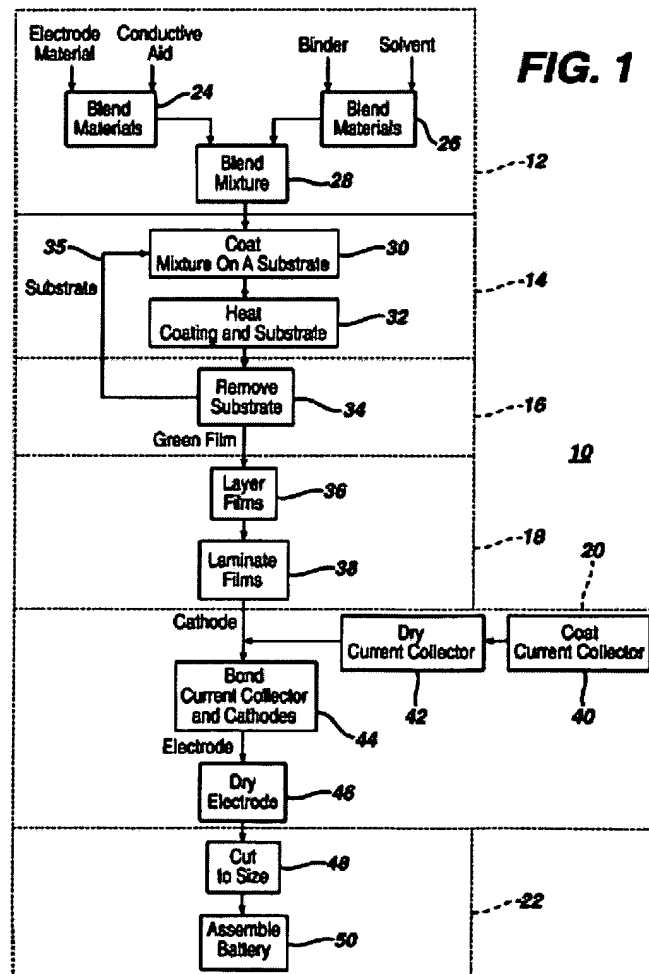


REMARKS

Applicants have cancelled independent claims 52, 60, and 73, and added a new independent claim 76. Claim 76 incorporates many of the features of claims 52 and 60, but also includes some additional, clarifying features. The dependent claims have been cancelled or amended to depend from claim 76. Applicants will begin by discussing claim 76 and the support in the application for claim 76.

Claim 76 incorporates many of the steps illustrated in Figure 1 and discussed on pages 5-9 of the application. For convenience, applications have reproduced Figure 1 below:



Claim 76 relates to making a cathode for a battery. Step (a) involves coating a cathode mixture including an electrode active material, a binder, and a solvent onto a substrate, and then removing the substrate to provide a first layer. The first layer includes at least the electrode active material and the binder but not the substrate, which has been removed. This step is discussed, for example, in paragraph 0035 (coating) and paragraph 0039 (removal of substrate) and generally corresponds to steps 30 and 34 in Figure 1.¹ The language "at least the electrode active material and the binder" is a reflection that heating step 32 in Figure 1 removes at least some but not necessarily all solvent, as discussed in paragraph 0036.

Step (b) in claim 76 is simply a statement that step (a) is repeated a second time to produce a second cathode layer. See the first sentence of paragraph 0040, which indicates that "a plurality of films" (the cathode layers) made according to the preceding paragraphs are layered. The continuous process shown in Figure 2, for example, produces a plurality of cathode layers; see the layers at step 36 in Figure 2.

Step (c) in claim 76 involves layering the cathode layers from steps (a) and (b) to provide a cathode stack that includes both layers. See step 36 in Figure 1 and paragraph 0040.

Finally, in step (d) in claim 76, a current collector is bonded to the cathode stack to provide the cathode. See step 44 in Figure 1 and paragraph 0042, and paragraph 0055.

Applicants briefly will discuss several dependent claims that will be mentioned during the discussion of the prior art rejection below. Claims 55 and 57 specify that the cathode layer made in step (a) still includes some solvent. This feature is discussed in paragraph 0036, which explains:

[0036] After the cathode mixture is applied to the substrate, the layer is dried to remove some solvent (step 32). In some circumstances, it is desirable to have residual solvent in the cathode layer after this drying step (step 32). The maximum amount of residual solvent is preferably no greater than 1200 ppm. It is believed that the residual solvent provides the partially dried layer with enhanced physical properties, e.g., flexibility, which enhances the ability of the layer to be laminated and calendered during fabrication (described below).

Claim 65 further specifies that two cathode stacks are prepared and that a stack is bonded to each side of the current collector. See paragraph 0040.

¹The specific embodiment discussed in the application and shown in Figure 1 has many features that are not present in generic claim 76.

The objection to the specification and the 35 U.S.C. § 112, ¶ 1 rejection of claims 52-61 and 63-72 in the June 26, 2006 office action are moot in view of claim 76 and the detailed explanation above discussing the support for each step in claim 76. The 35 U.S.C. § 112, ¶ 2 rejection of claims 73-75 is moot in view of the amendments to claim 73.

Independent claims 52 and 60 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chu, U.S. Pat. 5,582,623 ("Chu"). This rejection is moot because claims 52 and 60 were cancelled and replaced by independent claim 76. Chu does not anticipate or suggest the method covered by claim 76.

Chu discloses applying a cathode mixture to a substrate. Chu specifies that the substrate preferably also is the current collector, but Chu also mentions that as an alternative the cathode mixture can be applied to a removable substrate and dried. The removable substrate is removed, and a current collector is bonded to the layer to provide the electrode. Specifically, Chu says (col. 14, lines 32-45);

Preferably the substrate on which the slurry is applied is a current collector such as a sheet of stainless steel, aluminum, copper, titanium, metallized PET, or other conductive material which will not react at operating cell conditions. Suitable current collectors may also take the form of expanded metals, screens, meshes, foams, etc. as is known in the art. In alternative embodiments, the substrate may be a sheet of inert material that does not adhere to dried electrode material. One such suitable substrate material is Teflon®. After the electrode film is dried, it is peeled away from such substrate and later contacted to a current collector such as one of the above-mentioned materials.

Chu does not teach any benefit to using a removable substrate. Chu does not disclose layering cathode layers (step (c) in claim 76) and then applying a current collector to the resulting stack (step (d) in claim 76). Chu does make the following statement (col. 14, lines 27-31):

It should be noted that electrodes of appropriate thickness for low power applications may be made by laminating two or more thinner electrodes. In this manner, the problem of slow drying associated with thick electrodes can be avoided

This statement says that two or more thinner electrodes can be combined to form a thicker electrode. But the thinner electrodes referred to by Chu are not simply layers of a cathode material. Rather, each thinner electrode is the final product including both a layer of a cathode

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material and a current collector. This is much different from the method covered by claim 76, which requires first layering at least two cathode layers that lack a substrate, such as a current collector, and then bonding a current collector to the resulting stack. This sequence is not disclosed or suggested by Chu.

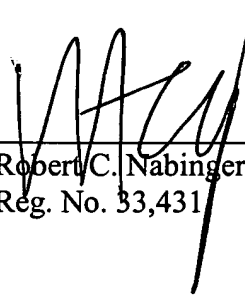
Chu also does not disclose or suggest leaving residual solvent in the cathode layer when the removable substrate is removed as required by claims 55 and 57 (Chu says to dry the film before removing the removable film). Finally, Chu does not disclose or suggest bonding cathode stacks to two sides of a current collector, as required by claim 65.

Various dependent claims were rejected under 35 U.S.C. § 103(a) over the combination of Chu and Hamamoto et al., 2002/0168576 ("Hamamoto"). But Hamamoto does not add anything to Chu.

Applicants respectfully suggest that the claims are in condition for allowance and such action is requested.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,



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